
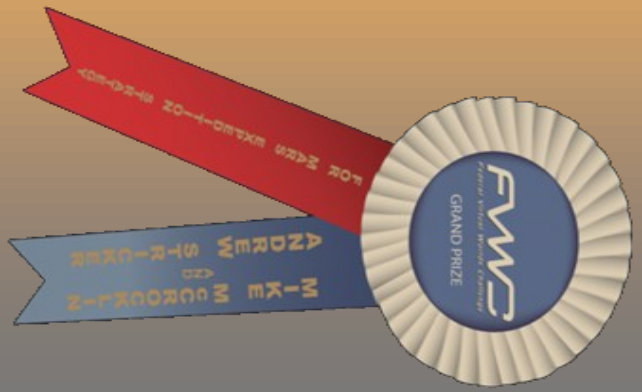



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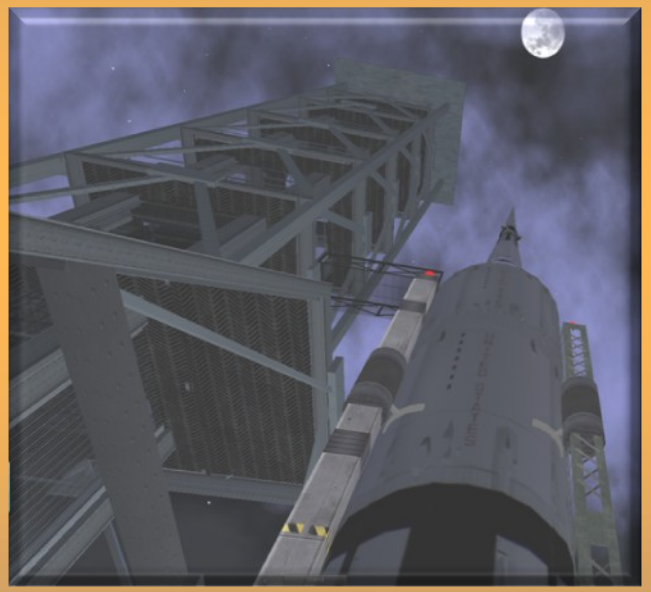
# Expedition Challenge-Based Learning

**Air Force Prototypes**

U.S. AIR FORCE

AIR UNIVERSITY

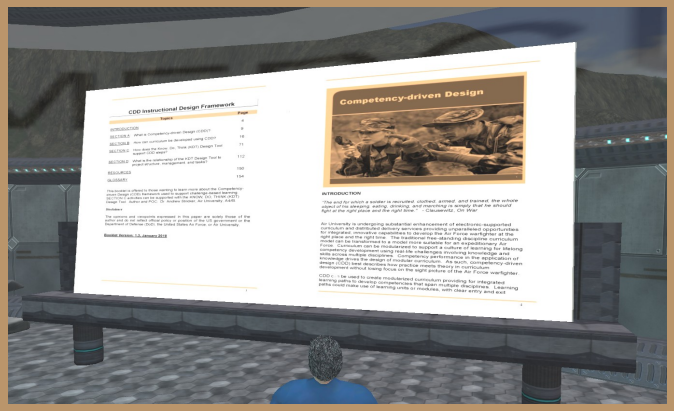


***"How people learn, instruct, and discover new knowledge"***

**Please inquire at the Huffman Prairie Omega Visitor Center for regional tour information.**

# Advanced Challenge-Based Learning Prototype

## 2010 Grand Prize Winner, Federal Virtual World Challenge




This challenge is based on the Competency-driven Design Framework and research funded by the National Science Foundation. This challenge can help learners become aware of their own thinking, improve effective planning, and increase awareness and use of resources. The purpose of this prototype is to demonstrate to educators the possibilities of immersive learning.


Participants start the challenge by entering the Huffman Prairie Sigma Launch Facility where they receive their pre-mission briefings from a robot, which prepares them for their expedition to Mars. They may also review the research on expedition challenge-based learning. Learners view a video detailing the specifics of their challenge.

The immersive challenge really gets started when the participants board the Orion rocket and blast off to the Ayn Rand Space Station where they receive further instructions. Along the way, participants (up to two) are given opportunities to learn tangential information about space, e.g., comets and asteroids.


The heart of the challenge occurs during the simulated trip to Mars. Participants are given pieces of information and asked to think deeply about the challenge. They record their initial solutions and then are given more information they are asked to consider. Integrated surveys are used to capture the students' thoughts for reflection at the end of the challenge.

One of the strengths of using 3-D immersive platforms is the ability to integrate rich resources like immersive reality, video vignettes, virtual books, and sounds to support the learners' discovery process. Near the end of the challenge, participants receive feedback on their choices. A final survey asks the learners to make a final decision and justify it.


Once safely on Mars in the mission debrief room, the learners are presented the pros and cons of the options they considered during the expedition, allowing them to synthesize what they already knew with what they considered during the challenge.